

CLAIMS:

1. An apparatus for making snow or a snow-like substance including:

a container having a cooling space adapted to contain pressurized air or gas of above atmospheric pressure; and

5 at least one flexible walled vessel extending through the cooling space, the at least one vessel being connectable to a water source, wherein the apparatus is operable to maintain the cooling space at a sufficiently low temperature to at least partially freeze the water within the flexible walled vessel.
2. The apparatus as claimed in claim 1 which is adapted to maintain a
10 static pressure within the cooling space of the container.
3. The apparatus as claimed in claim 1 which is adapted to maintain a static pressure within the cooling space of the container and to periodically and temporarily increase the pressure within the cooling space to compress the flexible walled vessel.
- 15 4. The apparatus as claimed in any one of the preceding claims further including a detachment aid to aid in detaching ice crystals and/or snow from the internal walls of the vessel.
5. The apparatus as claimed in claim 4 wherein the detachment aid comprises an inflation source to cyclically or intermittently at least partially inflate
20 the at least one vessel to effect dislodgement of the snow and/or ice crystals from the inner walls of the vessel.
6. The apparatus as claimed in claim 5 wherein the vessel includes an air release valve to release the air from the vessel and permit deflation thereof.
7. The apparatus as claimed in claim 5 or 6 wherein the inflation source
25 also serves to discharge the ice crystals and/or snow from within the vessel.
8. The apparatus as claimed in any one of claims 5 to 7 when dependent on claim 3 operable to temporarily increase the pressure in the cooling

space of the container above the static pressure, at the frequency of between 10 and 15 inflation/deflation cycles of the at least one vessel.

9. The apparatus as claimed in claim 2, 3 or 8 wherein the static pressure is approximately 20kPa.

5 10. The apparatus as claimed in claim 3, 8 or 9 wherein the increased pressure is in the range of approximately 25 to 30kPa.

11. The apparatus as claimed in any one of the preceding claims further including spray nozzles to spray a heat transfer medium onto the at least one vessel.

10 12. The apparatus as claimed in claim 11 further including refrigeration equipment to chill the heat transfer medium wherein the apparatus operates to circulate the heat transfer medium through the spray nozzles and the refrigeration equipment.

15 13. The apparatus as claimed in claim 12 further including a heater to heat the heat transfer medium, wherein the apparatus is operable to periodically bypass the refrigeration equipment and instead circulate the heat transfer medium through the heater and the spray nozzles.

14. The apparatus as claimed in any one of the preceding claims wherein the flexible walled vessel comprises a hose, pipe, tube, conduit or the like.

20 15. The apparatus as claimed in claim 14 wherein there are a plurality of vessels arranged in groups and the apparatus is operable to discharge the ice crystals and/or snow from the vessels within one group simultaneously with each group having their vessels discharged at successive intervals.

25 16. The apparatus as claimed in claim 15 wherein each of the vessels have a discharge valve and the discharge valves of each group are mechanically interconnected to operate in unison.

17. A method for making snow or a snow-like substance, including:

providing a container having a cooling space containing a fluid comprising substantially air with at least one flexible walled vessel extending through the cooling space;

connecting the at least one flexible walled vessel to a source of fluid
5 comprising substantially water;

pressurising the cooling space within the container to a pressure above atmospheric; and

maintaining the cooling space to a sufficiently low temperature to at least partially freeze the fluid within the flexible walled vessel.

10 18. The method as claimed in claim 17 further including periodically and temporarily increasing the pressure within the container to compress the flexible walled vessel.

19. The method as claimed in claim 17 maintaining a static pressure within the cooling space of the container and periodically and temporarily
15 increasing the pressure within the cooling space to compress the flexible walled vessel.

20. The method as claimed in any one of claims 17 to 19 further including cyclically or intermittently at least partially inflating the at least one vessel to effect dislodgement of the snow and/or ice crystals from the inner walls of the
20 vessel.

21. The method as claimed in claim 20 further including providing an air release valve to release the air from the vessel operating the valve to permit deflation of the at least one vessel.

22. The method as claimed in claim 21 further including opening the air
25 release valve to discharge the ice crystals and/or snow from within the vessel.

23. The method as claimed in claim 20 or 21 when dependent on claim 18 or 19 further including temporarily increasing the pressure in the cooling space

of the container above the static pressure, at the frequency of between 10 and 15 inflation/deflation cycles of the at least one vessel.

24. The method as claimed in claim 19 or 23 wherein the static pressure is approximately 20kPa.

5 25. The method as claimed in claim 23 or 24 wherein the increased pressure is in the range of approximately 25 to 30kPa.

26. The method as claimed in any one of claims 17 to 25 further including spraying a chilled heat transfer medium onto the at least one vessel.

10 27. The method as claimed in claim 26 further including periodically heating the heat transfer medium and spraying the heat transfer medium onto the at least one vessel.

28. The method as claimed in any one of claims 17 to 27 wherein the flexible walled vessel comprises a hose, pipe, tube, conduit or the like.

15 29. The method as claimed in claim 28 wherein there are a plurality of vessels arranged in groups and the method further comprises operating the apparatus to discharge the ice crystals and/or snow from the vessels within one group simultaneously and discharging the other groups at successive intervals.

20 30. The method as claimed in claim 29 wherein each of the vessels have a discharge valve, the discharge valves for each group being mechanically interconnected, the method further comprising operating the discharge valves of each group in unison.

31. An apparatus for making snow or a snow-like substance including:

at least one flexible walled vessel connectable to a water source; and

25 spray equipment to spray heat transfer medium onto the at least one flexible walled vessel to chill the at least one flexible walled vessel sufficient to form ice crystals and/or snow within the at least one vessel.

32. The apparatus as claimed in claim 31 wherein the spray equipment further includes refrigeration equipment to chill the heat transfer medium wherein the apparatus operates to circulate the heat transfer medium through the spray nozzles and the refrigeration equipment.

5 33. The apparatus as claimed in claim 32 further including a heater to heat the heat transfer medium, wherein the apparatus is operable to periodically bypass the refrigeration equipment and instead circulate the heat transfer medium through the heater and the spray nozzles.

10 34. The apparatus as claimed in any one of claims 31 to 33 wherein the at least one flexible walled vessel is provided within a container having a cooling space, the apparatus being adapted to maintain a static pressure within the cooling space of the container.

15 35. The apparatus as claimed in claim 34 which is adapted to maintain a static pressure within the cooling space of the container and to periodically and temporarily increase the pressure within the cooling space to compress the flexible walled vessel.

20 36. The apparatus as claimed in any one of claims 31 to 35 further including a detachment aid to aid in detaching ice crystals and/or snow from the internal walls of the vessel wherein the detachment aid comprises an inflation source to cyclically or intermittently at least partially inflate the at least one vessel to effect dislodgement of the snow and/or ice crystals from the inner walls of the vessel and wherein the vessel includes an air release valve to release the air from the vessel and permit deflation thereof.

25 37. The apparatus as claimed in claim 36 wherein the inflation source also serves to discharge the ice crystals and/or snow from within the vessel.

38. The apparatus as claimed in claim 36 or 37 when dependent on claim 35, which is operable to temporarily increase the pressure in the cooling space of the container above the static pressure, at the frequency of between 10 and 15 inflation/deflation cycles of the at least one vessel..

39. The apparatus as claimed in claim 38 or claim 35 wherein the static pressure is approximately 20kPa.

40. The apparatus as claimed in any one of claims 31 to 39 wherein the flexible walled vessel comprises a hose, pipe, tube, conduit or the like.

5 41. The apparatus as claimed in claim 40 wherein there are a plurality of vessels arranged in groups and the apparatus is operable to discharge the ice crystals and/or snow from the vessels within one group simultaneously with each group having their vessels discharged at successive intervals..

42. The apparatus as claimed in claim 41 wherein each of the vessels
10 have a discharge valve and the discharge valves of each group are mechanically interconnected to operate in unison.

43. A method for making snow or a snow-like substance comprising:

providing at least one flexible walled vessel;

connecting the at least one flexible walled vessel to a source of fluid
15 comprising substantially water;

spraying heat transfer medium onto the flexible walled vessel to form ice crystals and/or snow within the vessel.

44. The method as claimed in claim 43 further including circulating the heat transfer medium through a chiller to chill the heat transfer medium.

20 45. The method as claimed in claim 44 further including periodically bypassing the chiller and circulating the heat transfer medium through a heater.

46. The method as claimed in any one of claims 43 to 45 further comprising manipulating the vessel to detach ice crystals and/or snow from the inner wall of the vessel.

25 47. The method as claimed in claim 46 wherein the manipulation is provided by cyclically or intermittently at least partially inflating the flexible walled

vessel by a source of pressurized air or gas applied internally to the vessel wherein the air or gas is permitted to bleed from the vessel to allow deflation.

48. The method as claimed in claim 47 periodically subjecting the vessel to external pressurization to assist in compressing the flexible walled vessel.